

journey South again in 1910 his name became prominently associated with the work of the Grouse Disease Commission. On this last voyage he was surgeon, artist, and head of the scientific staff.

Of the manner in which Captain Scott and his companions met their deaths much has already been written. We will here do no more than record our admiration for the noble self-sacrifice in the cause of science and discovery which they have shown. Their names will be for ever associated with all that is truest and best in the life and history of the British race.

That one of them should have received his training within our walls is a fact of which all St. George's men must be proud. The full appreciation of Dr. Wilson's life and work we shall leave to those who knew him best.

We take this opportunity to offer our sincerest sympathies to Mrs. Wilson in her sad loss.

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We regret to have to announce also the death of Professor McHardy, another distinguished old St. George's man.

## The Treatment of Pleurisy with Effusion.

IN these short articles it is probably better to give personal opinions and experience, whether universally accepted or not, rather than an exhaustive account of a subject. Without pretending to deal with the whole question, I therefore propose to touch on some points in the treatment of pleurisy with effusion.

Pain, which diminishes or disappears as the increasing effusion separates the inflamed layers of the pleura, is the most urgent symptom in the early stages. It may be so agonizing as to prostrate the patient, seriously disturb the heart, and so demand a hypodermic of morphine; but this is somewhat exceptional, and usually local measures suffice. As the visceral pleura is insensitive, the pain of pleurisy is due to irritation of the parietal layer which is supplied by the intercostal nerves. There is, therefore, a justification for the empirical practice of local applications to the corresponding surface of the chest. These fall into two groups or, perhaps, expressed more accurately, act in two ways, according as they are analgesics or counter-irritants. This division, however, is far from watertight, for the actions may both be exerted at the same time by poultices and hot fomentations containing opium, the drug

deadening the sensibility of the nerve-endings and the heat dilating the blood-vessels and modifying the circulation in the way that counter-irritants are supposed to do. Linseed poultices are so seldom used now, that a caution may be thrown out not to apply them too hot, as the skin may be blistered. Ice poultices also relieve pain, probably by inducing vasomotor changes. Applications containing menthol, salicylates, such as mesotan and antiphlogistine, opium, and belladonna, may be tried for their analgesic influence. Belladonna plasters should be cut into strips and put on the chest as for fractured ribs. No doubt plasters give relief mechanically by fixing the chest and preventing irritation of the pleura, but that some absorption through the skin does occur is shown by the occurrence of toxic symptoms in patients peculiarly susceptible to belladonna. Leeches have a rapid, almost magical, effect on the pain of acute pleurisy, giving the patient peaceful sleep instead of pain with each breath. Though rather out of fashion and therefore stocked by very few chemists in London, they are still used at St. George's, but on a very different scale from that of sixty years ago.\* Mr. R. R. Cheers, our dispenser, tells me that during 1906 the hospital bought 650 leeches, and during the last three years 350 annually, but this does not mean that this number is actually used on patients, for there is sometimes an epidemic mortality among the leeches. Until they have experienced their benefits patients are often prejudiced against the use of leeches. The cold clammy contact of the leeches may be obviated by the plan employed by a former Sister of the McCalmont Ward; after the skin has been washed and dried, a piece of lint perforated by six or eight holes is spread over the affected area of the chest; the leeches, contained in leech-glasses or in test-tubes, are then held over the skin exposed by the apertures in the lint; as soon as they have bitten, the test-tubes are removed and the leeches rest on the lint instead of on the skin. Leeches sometimes decline to bite, especially after they have been pinched or freely manipulated, or if the skin has been washed with antiseptics, ether, or turpentine. They should, therefore, be gently coaxed into test-tubes containing a pad of cotton-wool, the head of the leech being, of course, towards the open end of the test-tube, and scented soaps and antiseptics must not be used in washing the skin. Leeches may be induced to bite by putting some milk, milk thickened with sugar, or cream, on the skin. The bites may bleed

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\* For the Practice of Medicine at St. George's Hospital in the early fifties, see Dr. W. H. Dickinson, *St. George's Hospital Gazette*, 1893, i, 77.



after the leeches drop off, because the glands in the pharynx of the leech contain an anticoagulating body, and bleeding may be increased by the application of a hot poultice. Though the amount of blood withdrawn by each leech is a drachm only, they should seldom be put on children, who, however, do not appear to suffer from pleuritic pain nearly so much as adults. Exactly how leeches relieve pain is not known, but possibly, like Bier's hyperæmic treatment, they attract more blood to the part. Dry cupping, which probably acts in the same way, does not influence pleuritic pain so quickly or so surely as leeches. Blistering also attracts blood to the deeper tissues, and has been recommended as preferable to poultices in old people. I have several times seen blisters on the chest as the result of poulticing before admission to the hospital, and, though the pain may have been somewhat relieved, the raw surface thus produced has often been so troublesome as to counterbalance any such benefit. Strapping the affected side diminishes movement, and thereby not only prevents pain, but also favours resolution of the inflammation. I have recently treated some cases of pleuritic effusion, in which pain was absent or very slight, by strapping the chest, and in some instances, especially in children, there has been an almost immediate fall of temperature, whether *post* or *propter hoc*. On the analogy of acute synovitis it may reasonably be anticipated that complete rest would benefit, and repeated physical examinations aggravate, acute pleurisy. It is quite conceivable that daily percussion of the chest retards the natural process of cure, and even that it may turn the scale between resolution of a pleuritic effusion and the development of an empyema. A comparison between two series of cases of pleuritic effusion—one examined in the routine fashion and the controls immobilized and treated like acute synovitis—would be instructive. In the later stages absorption of an effusion may be hastened by respiratory exercises, just as massage may remove a chronic synovial effusion.

No medicinal treatment, such as diuretics, purgatives, iodides, or a dry or a salt-free diet, has any appreciable effect in diminishing an acute pleuritic effusion. Withdrawal of some of the fluid and its injection under the skin has been recommended, but in the few cases under my observation thus treated I have been at best uncertain that any direct benefit has resulted.

In the presence of a considerable effusion the indications for tapping the chest, such as cyanosis, dyspnoea, bronchitis of the

other lung, and displacement of viscera, are indisputable. But the dictum of some authorities, which is practically "tap early and often, especially in tuberculous effusions," is to my mind open to discussion. It is possible that in the case of tuberculous effusions benefit may result from the production of a recurrent effusion with a higher opsonic index than that originally present. But removal of fluid, unless it has been stationary for some weeks, is not necessary from the point of view of ensuring proper expansion of the lung, for this recovery may occur in cases in which there has been collapse for long periods. Against early tapping it may be urged that the effusion serves a useful purpose by separating the inflamed surfaces and keeping the parts at rest. Further, the collapse of the lung induced by the effusion may be beneficial in cases with concomitant pulmonary tuberculosis. The treatment of pulmonary tuberculosis by the artificial production of pneumothorax, nitrogen being introduced, has become a recognized practice, and the results are encouraging. The way in which this form of treatment does good has been much discussed, but the obvious explanation is that the pneumothorax puts the lung completely at rest. A pleural effusion, which is Nature's method, will immobilize the lung in the same way as the more heroic procedure of artificial pneumothorax. In addition, though there appears to be some doubt whether the collapsed lung in artificial pneumothorax is hyperæmic or anæmic, the compressed lung in a fairly recent pleural effusion is engorged; and this condition should, on the analogy of Bier's treatment, increase the resistance of the lung. It is significant that cases of pulmonary tuberculosis preceded by a pleural effusion run a comparatively slow course; and it has recently been urged that the rational treatment of pulmonary tuberculosis is the induction of artificial pleurisy by the injection of a 10 per cent. solution of turpentine in oil (Cécikas), the aseptic inflammation providing antibodies such as oxydase.

When necessary, the fluid should be drained off from the chest by means of a trocar connected with an india-rubber tube which opens under the surface of some fluid, and not drawn off by an aspirator. Suction by an aspirator undoubtedly removes the fluid more rapidly, but in so doing it irritates the pleura or lung, sets up cough, and distresses the patient. As a result the paracentesis usually has to be stopped after about two pints have been withdrawn. Whereas, if the effusion is slowly syphoned off, much larger quantities—I have seen more than  $6\frac{1}{2}$  pints—can be removed



without distress to the patient. The entrance of some air into the pleura during the operation need not arouse any fear of a permanent pneumothorax; the only danger is that micro-organisms suspended in the air may secondarily infect the pleura. Recently, in fact, oxygen, which soon undergoes absorption, has been purposely introduced into the pleural cavity while the effusion is being removed, so as to allow the pleural cavity to be completely emptied (Morrison Davies); for it is stated that under ordinary conditions only half the fluid is withdrawn. On the other hand, it is a common experience that removal of quite a small amount of fluid is followed by rapid absorption of the remainder.

As bearing on tapping the chest exploratory puncture may be briefly referred to. High authorities consider that the bare suspicion of a pleural effusion, however small it may seem, is sufficient reason for exploring the chest by puncture. But as there are some drawbacks to this form of clinical activity, it should only be performed when it is really essential to remove fluid or to find out if it is purulent, and not as a matter of routine to decide the diagnosis. The objections to exploratory tapping are: (1) That, although there is fluid in the pleural cavity, none may be drawn off and the diagnosis is obscured. This failure may be due to blocking of the needle by punched-out tissue or by thick fibrin, or to the needle entering the lung, especially where it is adherent to the chest wall. It is interesting to note that occasionally in empyema, though rarely in a simple effusion, the temperature falls after a "dry" tapping and may remain down for some days, thus further obscuring the diagnosis. Possibly this temporary improvement is due to increased hyperæmia of the parts. It is, indeed, sometimes effective in clearing up imperfect resolution of consolidated lung. (2) Nervous patients may be considerably distressed by the puncture, though in other cases the pain is hardly worth mentioning and can be largely obviated by some form of local anæsthesia. (3) The occurrence of rare accidents, such as wounds of the intercostal arteries or abnormal branches of the internal mammary artery, or breaking of the needle in the chest. The needle has been known to perforate the diaphragm and to spread infection; thus exploration of an empyema at the base of the right lung has been thought to carry micro-organisms into the liver and cause suppurative pyelphlebitis. Perforation of the lung by the exploring needle very seldom does harm. Signs of a small and transient pneumothorax may result, but respiratory distress does not follow. (4) Transformation of a simple

into a purulent effusion after exploration or tapping, though said to be extremely rare, may certainly occur when ordinary aseptic precautions are taken. It is not necessarily a reflection on the operator's technique, for the infection may come from within—through the blood-stream—from the damaged chest wall or lung, and not from the needle. (5) Sudden death at the time of the puncture, due to shock. In most of the cases in which this most exceptional catastrophe has occurred, the needle has entered solid lung, and so probably stimulated branches of the vagus. Although it is true that harm can very seldom be definitely referred to an exploratory puncture, the possibility that these serious results may follow should make us hesitate to explore the chest unless there is good reason for so doing.

Lastly, one point about the treatment of empyema. When exploration of the chest shows the pressure of pus, it is advisable to remove as much as possible by means of the trocar and not to proceed at once to resection of a rib and free drainage. The reason for this delay is that occasionally in pneumococcic empyemas, especially in children, the temperature falls and the inflammation subsides, possibly because the pneumococci die out just as they may do in the laboratory. After its withdrawal the pus should be examined, and if it is found to be a pure pneumococcic infection it is safe to wait a couple of days. If the patient remains free from adverse signs and symptoms, well and good. If the temperature remains raised or becomes raised again, the chest must be properly drained. It is true that simple tapping seldom cures an empyema, but it is right to give the patient this chance.

H. D. ROLLESTON.

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### School Notes.

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WE apologize to our Readers for not having produced a January Gazette. Owing to unavoidable delay the December number appeared very late. It is intended to produce an April number in the place of the one now omitted.

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W. P. Tindal-Atkinson, F. H. Watson, A. E. L. Devonald have left us. The latter has "joined the Panel." Tindal-Atkinson is in practice near by. We wish all three success.

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The "Rugger" Team was badly beaten by Charing Cross Hospital. The latter are a strong side, and the result was not to be wondered at considering that several of our men were playing the game for the first time, and those not new to it were sadly out of practice.

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The Boxing Club, after a lapse of two years, has once more come to life. Meetings are held every Wednesday at 5.30 in the Club. Old St. George's men, wishing to indulge in a little light sparring exercise, are welcome to attend.